on zoölogy and a child's picture-book of animals. The chapters are divided into short, numbered paragraphs, each headed with a full-faced subtitle, in the style of a school 'reader.' This, and the rather pedagogical style, render it nearly certain that young people will not *read* it; while the necessary sketchiness of its contents, and the innumerable omissions, render it nearly useless as a book of reference. It may have some value in the hands of a teacher as suggesting a series of topics for elaboration, but, even so, we are confident that the patient examination of half a dozen typical specimens would furnish better results than this fragmentary treatment of several hundred. It is essentially a compilation. After reading the book, one dare not swear that the author has ever seen a single one of all the animals described, unless it be some of the common sea-creatures of the Massachusetts coast. The illustrations are attractive, reasonably accurate, and many of them artistic. The mechanical part of the book is well done.

Die Psychischen Störungen des Kindesalters. Von Dr. H. EMMINGHAUS. Tübingen.

WHILE this work by an eminent German alienist is primarily designed for specialists, it contains a number of interesting observations valuable to all who are concerned in the training of children, and illustrating from an unusual point of view certain marked characteristics of child-mind. The limitation of 'childhood' strictly to the period before the establishing of the functions that connect the individual with the race is at once significant: it gives the physiological basis for much of what is distinctive in child-life, and accents the enormity of the field of thought and feeling which the approach of adolescence suddenly reveals. As mental disease is to a large extent a concomitant of civilization, and this in turn is dependent upon a general and prolonged brain-culture, it is easy to see that the child who has not yet reached the stage where character is established, where keen competition excites each brain-cell to a maximum of action, is spared a large proportion of mental disease. This fact, then, that mental diseases are far less common among children than among adults, with the further fact that the affliction of children by a large class of mental diseases not uncommon in adults is a sporadic occurrence, it is essential to bear in mind. Since the influence of a pernicious environment is responsible for only a small share of mental breakdown in childhood, it follows that heredity — 'the sins of the fathers' — is the great disposing cause. And this shows itself in the production of two classes of children: (1) those who from birth show the marks of mental deficiency or perversity, or who, without any accident or maltreatment, are sure to show such marks within a few years; (2) those who show almost no suspicious symptoms in early childhood, but in whom the strains demanded of a civilized city child cause mental breakdown. It is this last numerous class of children that is open to the wise treatment of the intelligent parent and teacher as well as of the knowing physician. Another noteworthy point is that the mental abnormality of a child can be determined only by reference to a normal child of the same age, and with an appreciation of certain traits, which, almost always pathological when occurring in adults, are within the range of normal individuality in children. The analogy between the acts of the insane and the traits of children is often drawn. This includes more than the degenerative processes of senile dementia (second childhood), and is shown, for example, in the passion for collecting all sorts of curiosities, odds and ends, and the like (common to certain forms of mania). The most striking instance of this analogy is that of the wantonness of the actions in the transition period between boyhood and youth, for which the Germans have the term *Flegeljahre*. Here there is all the recklessness of demeanor, bigness of plans, swaggering egotism, and excitable caprice characteristic of developed mania. But it is only in the presence of predisposing causes that this period leaves the region of the normal; and the frequency of runaways from home, and other cravings for a free roaming life that appear at this age, suggest that a rational outlet for this superfluous energy might be provided.

Leaving these general considerations, a few points of illustrative value should be mentioned. In an interesting chapter on suicides in children, Dr. Emminghaus accents the importance of one-sided precocity as a disposing factor. Ideas belonging to a more mature period of life are by accident, by exciting literature or other cause, planted in a yielding brain, that has not yet acquired the stability of will, or the firm distinctiveness of moral habit, that keeps such weird notions from realization in action. Nothing could better illustrate the mischievous tendency fostered by competitive examinations, to goad children on ahead of their years, with a show of great brilliancy, but a brilliancy dangerous by lack of a sound physiological basis. The triviality of the alleged cause of suicide is only a further evidence of the abnormality (usually hereditary) of such children.[1]

Idiocy and imbecility have always been the type of mental disease in children. Their ultimate relation with other forms of insanity is likewise well understood, and it has been spoken of as nature's method of cutting off the progeny of a degenerate strain. While by its nature incurable, modern study has succeeded, by an early appreciation of the condition, in rescuing all but the severest forms from the utter helplessness formerly so common.

Finally, this very imperfect sketch of Dr. Emminghaus's point of view should not be completed without mentioning that the sharply defined plan of his work prevents him from recognizing that host of mental affections whose germs are often innate, and whose prodromal symptoms often clearly manifest in childhood, but which come to distinct view only later in life, especially at the periods of intense physiological change.

The Relative Proportions of the Steam-Engine. By WILLIAM DENNIS MARKS. Philadelphia, Lippincott. 8°.

THE little book lying before us is a volume containing matter of value and interest to technical schools. It represents the first attempt which, so far as we are aware, has ever been made to determine, by correct methods and in any considerable detail, the proportions of the parts of the steam-engine. It is a singular fact, that notwithstanding the importance of the steam-engine, and its attractiveness to scientific writers on applied mechanics, no treatise of this character has ever before been produced. The general theory of the heat-engines has, especially during the present generation and since the time of Rankine and of Clausius' work, been written and re-written by many writers, great and small, and has been elaborated with all the ingenuity that such authors are capable of; but not one has hitherto had the good judgment, the patience, and the ability, to produce a good book on the proportioning of its rods and cranks, its fly-wheels and its cylinders. Some such work has been done by a few European writers; but none have devoted themselves to the production of a special treatise upon the subject.

Professor Marks has gone into the work with a zeal which could not but be fruitful of result, and has produced a book which will be of very great value to the profession and in the schools. Collating all that could be found in standard writers on the strength of materials and on machine design, he has added much useful material as the result of his own investigations, and has thus put into convenient form and into a single volume a very large amount of fact and calculation indispensable to the student in engineering and to the designer of machinery of this kind. A chapter is devoted to the study of the proportions of the steam-cylinder and the calculation of power; another to the sizes of bolts, areas of ports, and size of piston-rods. The proportions of fastenings, such as gibs and keys; the size and shape of the connecting-rod and its connections; the sizes, forms, and proportions of crank-pins, and the proportioning of the crank in wrought or cast iron and in steel, — form the subjects of succeeding chapters; and the size of the crank-shaft in the several available metals is calculated by carefully established formulas and rules. Among the best parts of the book are the studies of the effect of the fly-wheel, and its action as a regulator. This is probably the most complete and practically valuable discussion of this subject to be found. The last chapter, that on the governor, is the least satisfactory in the book; and it would seem that the writer had not yet worked up to that point in his progress toward his ideal of his book.

[1] It is interesting to note that even in children the modes of suicide in the two sexes are strikingly different. The boys in seventy-five per cent of all cases hang themselves, in fifteen per cent drown themselves, in three per cent poison themselves, and never stab themselves. Of the girls, only ten per cent meet death by hanging, but sixty-four per cent by drowning, thirteen per cent by poison, and eight per cent by stabbing.